

CLAIMS

1. A hand-held dispenser for dispensing a multiplicity of unit products comprising:-

5 a container for containing the unit products which has an access opening through which the unit products are able to be removed from the container; and

10 connected to the container in an operational position in which the dispensing module covers the access opening, the dispensing module having:-

15 an internal volume into which the unit products are transferable from the container through the access opening when the dispensing module is in the operational position;

an outlet opening which communicates with the internal volume; and

20 a dispensing mechanism which operates to dispense a predetermined number of unit products from the outlet opening on actuation thereof.

2. The dispenser of claim 1 further having a closure for closing the outlet opening.

25 3. The dispenser of claim 2 wherein the closure is able to close the access opening of the container.

30 4. The dispenser of claim 2 or 3 wherein the closure is a cap.

5. The dispenser of claim 2, 3 or 4 wherein the closure is adapted to be releasably fitted to the dispensing module and/or the container.

5 6. The dispenser of claim 5 wherein the closure is able to be screw fitted to the dispensing module and/or the container.

7. The dispenser of any one of the preceding 10 claims in which the dispensing mechanism is adapted in use to dispense the unit products one at a time from the outlet opening.

8. The dispenser of any one of the preceding 15 claims in which the predetermined number is one.

9. The dispenser of any one of the preceding claims wherein the dispensing mechanism is manually actuable by a user.

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10. The dispenser of any one of the preceding claims wherein the dispensing mechanism has a non-dispensing mode, in which it prevents the unit products from being dispensed from the outlet opening, 25 and a dispensing mode, in which it dispenses the predetermined number of unit products from the outlet opening, the dispensing mechanism moving from the non-dispensing mode to the dispensing mode on actuation of the dispensing mechanism.

11. The dispenser of claim 10 wherein the dispensing mechanism is biased to the non-dispensing mode by a biasing structure in the dispensing module.

5 12. The dispenser of any one of the preceding claims wherein the dispensing mechanism has a gate mechanism which moves from a shut state to an open state on actuation of the dispensing mechanism, the gate mechanism shutting the outlet opening in the shut 10 state to prevent dispensing of the unit products therefrom and opening the outlet opening in the open state to enable dispensing of the unit products therefrom.

15 13. The dispenser of any one of the preceding claims wherein the dispensing mechanism is adapted to cause the unit products to be conveyed to the outlet opening one at a time.

20 14. The dispenser of claim 13 wherein the dispensing module internal volume has a channel along which the unit products are conveyable to the outlet opening, the channel adapted to cause the unit products to be conveyed to the outlet opening one at a 25 time.

15. The dispenser of any one of the preceding claims wherein the dispensing mechanism is adapted to cause the unit products to be conveyed to the outlet opening in a common predetermined orientation of the unit product.

16. The dispenser of claims 14 and 15 wherein
the channel is further adapted to cause the unit
products to be conveyed to the outlet opening in the
5 common predetermined orientation.

17. The dispenser of claim 14 or 16 wherein the
internal volume defines a funnel-like shape which
comprises the channel at an outlet end thereof and a
10 mouth of tapered construction at an inlet end thereof
which communicates with the container access opening
in the operational position of the dispensing module
and operates in use to funnel the unit products into
the channel.

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18. The dispenser of claim 14, 16 or 17 wherein
the channel is of length sufficient that a queue of
unit products is able to form therein.

20 19. The dispenser of any one of claims 14 or 16
to 18 when appendant on claim 12 wherein the gate
mechanism blocks the channel in its shut state and
unblocks the channel in its open state.

25 20. The dispenser of claims 18 and 19 wherein
the gate mechanism is adapted to selectively release
the predetermined number of unit products at the front
of the queue when moved to its open state.

30 21. The dispenser of claim 20 wherein the gate
mechanism is adapted such that in its shut state it

blocks the channel in front of the queue and such that when it is moved from the shut state to the open state it unblocks the channel in front of the queue and blocks the channel behind the predetermined number of 5 unit products at the front of the queue whereby the predetermined number of unit products is dispensed from the outlet opening.

22. The dispenser of claim 21 wherein the gate 10 mechanism is further adapted such that as it moves from the shut state to the open state it displaces the portion of the queue disposed behind the predetermined number of unit products at the queue front backwards in the channel.

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23. The dispenser of any one of the preceding claims in which the dispensing mechanism has a manually-engagable actuator for actuating the dispensing mechanism.

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24. The dispenser of claim 23 wherein the actuator protrudes from the dispensing module and is displaceable to actuate the dispensing mechanism.

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25. The dispenser of claim 24 wherein the actuator is displaceable into the dispensing module.

26. The dispenser of claim 23, 24 or 25 wherein the actuator and outlet opening are so arranged on the 30 dispensing module that the actuator is able to be

actuated by a hand of a user so that the predetermined number of unit products is dispensed into that hand.

27. The dispenser of claim 26 wherein the actuator and outlet opening are provided in a surface of the module such that pushing the module surface into a user's palm is able to cause actuation of the actuator and dispensing into the palm.

10 28. The dispenser of any one of claims 23 to 27 when appended directly or indirectly on claim 12 in which the actuator forms at least a part of the gate mechanism.

15 29. The dispenser of any one of the preceding claims including the unit products.

30. The dispenser of any one of the preceding claims in which the unit products are pharmaceutical products.

31. The dispenser of claim 30 wherein the pharmaceutical products are oral dosage forms.

25 32. The dispenser of any one of the preceding claims in which the dispensing module further has a dispensing indicator which is adapted in use to indicate the number of unit products dispensed from, or remaining in, the dispenser.

33. The dispenser of claim 32 wherein the dispensing indicator has a display which in use represents graphically the number of unit products dispensed or remaining.

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34. The dispenser of claim 33 in which the dispensing indicator is a counter and the display in use represents numerically the number of unit products dispensed or remaining.

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35. The dispenser of claim 33 or 34 wherein the display is an electronic display.

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36. The dispenser of any one of claims 32 to 35 in which the dispensing indicator is an electronic indicator.

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37. The dispenser of any one of claims 32 to 36 wherein the dispensing indicator is operatively coupled to a detector which is adapted in use to detect actuation of the dispensing mechanism.

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38. The dispenser of any one of claims 32 to 37 wherein the dispensing indicator is operatively coupled to a detector which is adapted in use to detect dispensing of the predetermined number of unit products.

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39. The dispenser of claim 37 or 38 when appended directly or indirectly to claim 35 wherein the dispensing indicator has an electrical control

circuit for controlling the display and the detector(s) is a trigger(s) for the circuit.

40. The dispenser of claim 39 wherein the
5 trigger(s) is a switch operable to trigger the circuit.

41. The dispenser of claim 40 when appended to
claim 37 wherein the dispensing mechanism is adapted
10 to operate the switch when actuated.

42. The dispenser of claim 40 when appended to
claim 38 wherein the switch is positioned so as to be
operated by the unit product(s).

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43. The dispenser of any one of the preceding
claims in which the dispensing module has a timing
mechanism adapted in use to time the period since last
dispensing of the predetermined number of unit
20 products.

44. The dispenser of claim 43 in which the
timing mechanism is adapted in use to indicate the
time since last dispensing.

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45. The dispenser of claim 44 having a display
on the dispensing module forming part of the timing
mechanism on which, in use, the time since last
dispensing is graphically indicated thereon.

46. The dispenser of claim 43, 44 or 45 wherein the timing mechanism has a controller programmed with a predetermined dispensing regime for dispensing of the unit products and the controller controls the timing mechanism so that it provides an alert when dispensing of the unit products is required in accordance with the dispensing regime.

47. The dispenser of any one of the preceding claims which is adapted such that in use the unit products are gravity-fed from the container to the dispensing module.

48. The dispenser of claim 47 which is adapted such that in use the unit products are gravity-fed to the outlet opening.

49. The dispenser of any one of the preceding claims in which the dispensing module is connected to the container and a tamper-evidence structure is provided to show whether the dispensing module is subsequently disconnected from the container.

50. The dispenser of claim 49 in which the tamper-evidence structure is applied across a boundary between the dispensing module and the container.

51. The dispenser of claim 50 wherein the tamper-evidence structure is a label.

52. The dispenser of any one of the preceding claims wherein the dispensing mechanism is a pump-based mechanism.

5 53. A dispensing module for connection to a container for unit products as set forth in any one of the preceding claims.

54. The dispensing module of claim 53 having a
10 first connector structure for connecting the dispensing module to the container and a second connector structure for enabling connection of a closure to the dispensing module to close the outlet opening, the first and second connector structures
15 being complementary to one another whereby the closure is also connectable to the container in place of the dispensing module.

55. A dispenser for dispensing a multiplicity of
20 unit products substantially as hereinbefore described with reference to, and illustrated in, FIGURES 2-12 or FIGURES 13-14 of the accompanying drawings.

56. A dispensing module for connection to a
25 container for unit products substantially as hereinbefore described with reference to, and illustrated in, FIGURES 2-12 or FIGURES 13-14 of the accompanying drawings.